

We claim:

1. A water-absorbent composition containing from 30 to 100% by weight, based on the water-absorbent composition, of water-insoluble water-swellaable hydrogels characterized by the following features:
  - Centrifuge Retention Capacity (CRC) of at least 24 g/g,
  - Saline Flow Conductivity (SFC) of at least  $80 \times 10^{-7} \text{ cm}^3 \text{ s/g}$  and
  - Free Swell Rate (FSR) of at least 0.15 g/g s and/or Vortex Time of not more than 160 s.
2. A water-absorbent composition as claimed in claim 1, wherein the water-swellaable hydrogels are present in conjunction with a base material for the hydrogels.
3. A water-absorbent composition as claimed in claim 2, wherein the water-swellaable hydrogels are embedded as particles in a polymer fiber matrix or an open-celled polymer foam, fixed on a sheetlike base material or present as particles in chambers formed from a base material.
4. A water-absorbent composition as claimed in any of claims 1 to 3, wherein the hydrogels are coated with a steric or electrostatic spacer.
5. The process for producing water-absorbent compositions as claimed in any of claims 2 to 4 by
  - preparing the water-swellaable hydrogels,
  - optionally coating the hydrogels with a steric or electrostatic spacer and
  - conjoining the hydrogels to the base material, preferably introducing the hydrogels into a polymer fiber matrix or an open-celled polymer foam or into chambers formed from a base material or fixing on a sheetlike base material.
6. The use of water-absorbent compositions as claimed in any of claims 1 to 4 for producing hygiene articles or other articles for absorbing aqueous fluids.
7. Hygiene articles containing a water-absorbent composition as claimed in any of claims 1 to 4 between a liquid-pervious topsheet and a liquid-impervious backsheet.

27

8. Hygiene articles as claimed in claim 7 in the form of diapers, sanitary napkins and incontinence products.
9. The method for improving the performance profile of water-absorbent compositions by enhancing the permeability, capacity and swell rate of the water-absorbent compositions by use of water-insoluble water-swellaable hydrogels characterized by the following property spectrum:
- 10
- Centrifuge Retention Capacity (CRC) of at least 24 g/g,
  - Saline Flow Conductivity (SFC) of at least  $80 \times 10^{-7} \text{ cm}^3 \text{ s/g}$  and
  - Free Swell Rate (FSR) of at least 0.15 g/g s and/or Vortex Time of not more than 160 s,
- 15
- in the water-absorbent compositions.
10. The method for determining water-absorbent compositions possessing high permeability, capacity and swell rate by measuring the Centrifuge Retention Capacity (CRC), Saline Flow Conductivity (SFC), Free Swell Rate (FSR) and/or Vortex Time for water-insoluble water-swellaable hydrogels present in a given water-absorbent composition and determining the water-absorbent compositions whose hydrogels are characterized by the following property spectrum:
- 20
- 25
- CRC of at least 24 g/g,
  - SFC of at least  $80 \times 10^{-7} \text{ cm}^3 \text{ s/g}$  and
  - FSR of at least 0.15 g/g s and/or Vortex Time of not more
- 30
- than 160 s.
11. The use of water-absorbent compositions containing water-insoluble water-swellaable hydrogels characterized by the following features:
- 35
- Centrifuge Retention Capacity (CRC) of at least 24 g/g,
  - Saline Flow Conductivity (SFC) of at least  $80 \times 10^{-7} \text{ cm}^3 \text{ s/g}$  and
  - Free Swell Rate (FSR) of at least 0.15 g/g s and/or Vortex Time of not more than 160 s,
- 40
- in hygiene articles or other articles for absorbing aqueous fluids to enhance the permeability, capacity and swell rate.

45